~~to appear~~ in NELS 14 p 220-236 A17

févr. 1984.

ON DERIVING DEEP AND SURFACE ORDER

Hilda Koopman

McGill University

0. Introduction

In recent developments, the superficial complexity and diversity of surface word order is viewed as resulting from the interaction of the base component, which consists of a limited variety of parameters such as the head initial-head final parameter of X-bar theory, with other subtheories of grammar, such as Case theory, for example (cf Chomsky (1981, and in particular Stowell (1981) for discussion).

In this paper, we will pursue the idea that actual surface orders in a particular language are determined by a minimally specified base component and a variety of parameters of subtheories of grammar. More specifically, restricting our attention to a discussion of those parameters which are needed in order to account for the order of a lexical head and its complements, we will argue that UG must comprize two independent parameters: a parameter establishing the directionality of θ-role assignment as leftward or rightward, and a parameter establishing the directionality of Case assignment as leftward or rightward. The latter parameter is part of Case theory, and determines the ordering at S-structure; the former is part of θ-theory, and determines the ordering at D-structure. By virtue of the θ-criterion, it will determine the order of a θ-assigner and a θ-assignee at all levels of syntactic representation, i.e. D-structure, S-structure and LF. This parameter, we will argue, constitutes the core case of the head initial-head final parameter.

This paper is organized in the following way. That directionality of θ-role assignment needs to be postulated, whether UG includes a head initial-head final parameter or not, will be argued in 1. Evidence for this parameter will be shown to derive from the distribution of PPs in Dutch. In 2, evidence will be presented for directionality of Case assignment, and in 3 we will discuss the relation of the parameter for directionality of θ-role assignment to the head initial-head final parameter.

1. Directionality of θ-role assignment

Suppose that θ-theory contains a parameter that specifies in which direction a particular lexical category assigns it(s) θ-role(s). The existence and independence of such a parameter can only be established if it can be shown that such a parameter is needed, whether UG incorporates a head initial-head final parameter or not. Although we will question the existence of a head final-head initial parameter in 3 below, we will assume its validity in the following discussion.

The evidence for directionality of θ-role assignment can be based upon the distribution of PPs in Dutch. It seems uncontroversal that the Dutch VP is head final.[1] In surface structures, certain complements - as expected - must occur preverbally,(where we refer to the base position of the verb, not to the position in which the verb appears after the application of V-second or verb raising). Certain other complements of the verb (eg. PPs) may appear pre- or postverbally:[2]

(1) a. dat Marie vaak bloemen <u>aan Jan</u> geeft
that Marie often flowers to John gives
'that Mary often gives flowers to John'

b. dat Marie vaak bloemen geeft <u>aan Jan</u>
that Mary often flowers gives to John

Still other complements of the verb, eg. tensed complement clauses and certain infinitival complements, must occur in postverbal position in surface structures:

(2) a. dat Marie overal vertelt <u>dat Jan morgen komt</u>
that Mary everywhere tells that John tomorrow comes
'that Mary tells everywhere that John will come tomorrow'

b.* dat Marie overal <u>dat Jan morgen komt</u> vertelt
that Mary everywhere that John tomorrow come tells

Several complements of the verb may cooccur in postverbal position, in the order PP S':

(3) dat zij gezegd heeft tegen Jan dat Piet een boek wou schrijven
that she told has against J that P a book wanted write
'that she has told John that Peter wanted to write a book'

Since the postverbal PPs in (1b) and (3) are arguments of the verb, the question arises how the θ-criterion is satisfied. There are basically two ways in which this can be achieved: either the postverbal PP is θ-marked in that position - θ-role assignment would be a non-directional process - or the θ-role is assigned to a preverbal trace.

Let us assume that government is a prerequisite for θ-role assignment. In order to determine whether or not a postverbal PP can be directly θ-marked, it has first to be determined whether the verb governs its postverbal complements in the examples above. It can be established that the S' complement in (2) and (3) are governed by the verb, by taking into account wh-extraction. The literature contains proposals (see, among others, Belletti and Rizzi (1981), Huang (1982)) to the effect that the S' boundary of a clausal complement does not count as bounding, if this S' complement is governed. Using this criterion as a test for government, the possibility for extraction from the S' complement indicates that it is governed:

(4) wat voor boek heeft zij gezegd tegen Jan dat Piet t wou schrijv
what for book has she told against J that P wanted write
'What kind of book did she tell John that Peter wanted to write

Although similar evidence for postverbal PPs is difficult to construe, [3] it seems natural to assume that they are governed as well, since the PP complements must precede the S'.

Given the government relation between the verb and the postverbal PP, then, and given the assumption that government suffices for θ-marking to occur, postverbal PPs could respect the θ-criterion by receiving their θ-role directly from the verb. If PPs can be assigned their θ-roles directly, one would predict that they may occur freely either to the left or to the right of the verb. This prediction is not borne out, though: there are PPs which are excluded from occurring in postverbal position. The following example illustrates the impossibility for idiomatic PPs to occur postverbally:

(5) a. dat zij moeilijk aan de bak kunnen komen
that they difficult to the container can come
'that they have trouble finding a job'

b.* dat zij moeilijk kunnen komen aan de bak
that they difficult can come to the container

How can this asymmetry between pre- and postverbal position be explained?

Let us consider how idiomatic expression are treated. It is assumed in Chomsky (1981) and Vergnaud (1982) that in idiomatic expressions, a verb assigns a particular θ-role to the content of a particular category. Thus in (5), the verb komen would assign a particular θ-role to the content of the PP aan de bak. Now, if government were a sufficient condition for θ-role assignment, one would expect (5a) and (5b) to be identical. This is not the case, though. If one assumes instead that in (5b) the PP cannot be directly θ-marked by the verb, i.e. if θ-roles can only be assigned in a particular direction - to the left in the Dutch VP - the ungrammaticality of (5b) can be quite straightforwardly accounted for. In (5b), the idiomatic PP would have to be represented by a preverbal trace, since the verb assigns a θ-role to a particular PP as a lexical property. But in order to get the idiomatic reading, this particular θ-role has to be assigned to the specific content of a PP. If we assume that this particular content is not recoverable from the trace, examples of the type illustrated in (5b) are excluded by the θ-criterion. Adopting this reasoning, it must be the case that θ-role assignment is a directional process: θ-theory must contain a parameter establishing the direction in which θ-roles are assigned. It is clear that this parameter and the head initial-head final parameter overlap in many respects. We return to this point in 3. In the discussion which follows, we will use directionality of θ-role assignment to indicate whether a particular projection is head initial or head final.

2. Directionality of Case assignment

2.0. Preliminairy remarks.

One can maintain an optimally simple X-bar schema, which is determined basically by lexical properties, the parameter for θ-role directionality and the head initial-head final parameter, by explaining certain order restrictions as resulting from the interaction with other subtheories such as Case theory for example. Thus, the impossibility of the order V PP NP or V Adv NP in the English VP can be viewed as a consequence of Case theory, more precisely of the Adjacency condition on Case assignment (cf Chomsky (1981) and Stowell (1981)).

Suppose that Case theory also contains a parameter specifying the direction in which Case is assigned.

Independence of the values for directionality of θ-role and Case assignment predicts the existence of the following types of languages.

(6) Directionality of

	Case assignment	θ-role assignment
a.	Left	Left
b.	Right	Right
c.	Right	Left
d.	Left	Right

In many languages, the specifications for the directionality of θ-role and Case assignment coincide, yielding head final languages ((6a), SOV) and head initial languages ((6b)SVO, VSO)[4]. The question arises whether languages with the properties (6c) and (6d) also exist. We will now procede to show that such languages can indeed be found, and discuss in 2.1. and 2.2. respectively Chinese as an example of a language with the characteristics in (6c)[5], and Mahou, a Northern Mande language as an example of a language with the characteristics in (6d). In 2.3, we will discuss Dutch as an example of another language illustrating (6c).

2.1. Chinese.

Let us start with a brief presentation of Chinese surface structures, where we rely heavily on the extensive discussion and analysis of the base component of Chinese presented in Huang (1982). The surface order of constituents in Chinese can be roughly represented as in (7):

(7) a. S ---> NP ADV PP V NP

b. Zhangsan zuotian zai xuexiao kanjian-le Lisi
Zhangsan yesterday at school see -ASP Lisi
'Zhangsan saw Lisi at school yesterday'
(Huang,(1),p26)

One observes that the verb is neither VP initial, nor VP final: (here) direct object NPs _follow_ the verb, whereas all other complements and modifiers _precede_ it. Further characteristics of Chinese are that is is prepositional,

(8) PP ---> P NP

and that NPs are strictly head final:[6]

(9) a. NP ---> ...N
b. ta dui zheijian shiqing de liaojie
his towards this matter DE understanding
'his understanding of this matter' (Huang (12), p22).

In order to account for these data, Huang proposes the following characterisation of the X-bar structure of Chinese:

(10) The X- bar structure of Chinese is of the form:

a. $[_{X^n}\ X^{n-1}\ \ YP^*\ ]$ iff n=1 and X ≠ N

b. $[_{X^n}\ YP^*\ \ X^{n-1}\ ]$ otherwise (Huang (20), p41).

Thus, Chinese would use the head initial rule only for the lowest level expansion, but require the head final rule for all higher levels. Noun phrases escape this schema, and never involve the head initial rule.

The X-bar schema in (10) raises several questions: why do projections of N escape (10a), or why is it the case that bare lexical NPs complements of Vs and Ps follow the verb and P, whereas all other complements precede? The fact that only bare lexical NPs occur to the right of the canonical Case assigners V & P suggests that (10) incorporates the effects of Case theory. Thus projections of Ns would in no way be exceptional; rather they would represent the core case of Chinese phrase structure, characterized by (11):

(11) θ-roles in Chinese are assigned to the left

Similarly, no special statements are required for preverbal complements. What needs explanation is the obligatory occurrence of bare lexical NPs to the right of verbs and Ps.

Let us assume that this is a consequence of the following parameter of Case theory:

(12) In Chinese, Case is assigned to the right.

The exceptional position of bare NPs with what may be called the 'classical' Case markers V and P, would be a consequence of (12) applying at S-structure.

Given (11) and (12) as parameters of Chinese grammar, let us now consider the case in which the two enter into conflict. Conflicts arise for NPs, since NPs usually require both θ-role and Case, and, according to (11) and (12), NPs are never both in a θ-marked and in a Case marked position at any level of representation. i.e. a conflict arises for the following D-structure representation which is determined by (11):

(13) $[_{VP}$ NP V $]$

The NP complement in (13) is assigned a θ-role by the verb. But how can it satisfy the Case filter? Chinese surface structures indicate that there are two ways in which an NP may satisfy the Case filter; (i) by appearing to the right of a verb or of a P, a position in which it can be Case marked by the latter, (we assume that the NP moves from preverbal position into postverbal position, but for discussion see Koopman (1984) and footnote 13), or (ii) by appearing in the so-called ba-construction.

In this construction, a thematic object may occur in preverbal position, provided it is marked by the preposition ba:

(14) ta ba Lisi pian-le
he BA Lisi cheat-ASP
'he cheated Lisi' (Huang (4), p27)

(11) and (12) provide a simple account for this construction. The thematic object NP may occur in preverbal position at S-structure, providing it respects the Case filter. Since Case assignment is right directional, the NP cannot be directly Case marked by the verb, hence the impossibility of the order NP V. But insertion of the dummy preposition ba allows Case marking of the direct object NP, whence the grammaticality of (14).

In sum, then, the X-bar structure in (10) reduces to two independent parameters, (11) and (12). D-structures are determined by (11) which states that θ-roles are assigned to the left. Underlying order cannot be directly recovered from actual surface structures if bare lexical NP complements are present, because of the interaction with (12), which specifies that Case is assigned to the right. This either forces the NP to occur to the right of a Case assigner, or insertion of the dummy preposition ba. Underlying order can be recovered from surface structures, however, if PPs are present or the ba-construction is used. This analysis thus accounts for the exceptional surface structure position of NPs in terms of Case theory, and provides support for the existence of an independent parameter for the directionality of Case assignment.

2.2. Mahou.

Let us now illustrate a case of a language representing (6d), i.e. the mirror image of Chinese. We will illustrate our point for Mahou, a Northern Mande language, relying on work by Bamba (1982). The analysis we will present seems to extend to all Mande languages, though.

The surface order of constituents in Mahou is presented in (15a):

(15) a. NP INFL NP V PP S'

b. cɛ̀ɔ́ wɛ́ɛ́ jí mí bɔ́ɛ nà
man-DEF INFL water drink cabin in
'the man drank water in the cabin'

c. màrí yé (à) fɔ̀ [sékù yɛ́][kó à à nà lú mà]
Mary INFL (it) tell Sekou to KO he INFL come house to
'Mary is telling Sekou to come home'

The direct object NP must precede the verb whereas all other complements must follow it. It is important to note that <u>only</u> direct object NPs may appear in preverbal position.

Mahou is postpositional, as we can see in (15b), and the structure of NPs is presented in (16):

(16) a. (i) NP ---> N' SPEC
(ii) N' ---> COMPL N

b. [$_{NP}$ [[$_{PP}$ tá kà] [gù]] ò]
fire on yam DEF
'the yam on the fire'

c. mùsɔ̀ɔ́ yàà̀ò
woman-DEF image-DEF
'the picture of the woman'

What is the specification for the X-bar schema in Mahou? There are basically two alternatives, depending on whether we assume that the directionality for θ-role assignment is fixed once and for all across lexical categories, or whether the specifications may vary according to lexical categories.

Since NP and PP are head final, and since verbs follow the direct object NP, let us first assume a unified D-structure, determined by (17):

(17) Lexical categories assign their θ-role to the left.

From this specification, the following base rules derive:

(18) a. NP --->... N
b. VP --->... V
c. PP --->... P

Furthermore, since bare lexical NPs precede the verb and the language is postpositional, let us assume the following parameter for Case assignment:

(19) In Mahou, Case is assigned to the left

Given (17) and (19), the NP in (15b) occurs in its D-structure position. But since only NPs may occur preverbally, an obligatory extraposition rule for all non-NPs (PPs, S', Adv...) must be postulated. The possible explanation of such obligatory extraposition rules seems highly problematical, however.(7) The fact that only NPs may occur in preverbal position may rather be taken to indicate that (17) should be modified as (20):

(20) (i) Verbs assign their θ-role to the right
(ii) Nouns assign their θ-role to the left

In other words, Mahou fulfills the description of a language exhibiting the characteristics in (6b), with verbs assigning a θ-role to the right, but Case to the left.

As in Chinese, the question again arises of how direct object NPs can respect the Case filter, given (20i) which determines the D-structure V NP ...; the object NP in such structures does not occur in a position in which it can be assigned Case. We will assume that, just as in Chinese, the NP will satisfy the Case filter by moving into preverbal position, in which it can be assigned Case, under adjacency with a Case assigner. This analysis thus accounts for the exceptional position of direct object NPs by means of Case theory.

We will assume, as for Chinese, that this movement process represents movement to a θ'-position, and that the general characteristics of this rule are identical to those of clitic movement in the Romance languages. Such an analysis is further corroborated by phonological evidence in Mahou, which shows that the relation between a direct object NP and a verb is similar to that of a clitic and a verb, in the sense that they constitute a phonological domain for certain phonological processes, such as nasalisation or foot formation for tone/accent (cf Bamba (1984)).

The analysis accounts for the surface structures in Mahou on the basis of two very general statements: (19) and (20). The exceptional surface position of direct object NPs, is a consequence of Case theory, more precisely, of the value for the parameter of Case directionality. The cost of adopting the more specific (20) over the more general (17) seems to be largely compensated by the simple analysis it allows of actual surface orders. Moreover, different specifications for the direction of θ-role assignment must be allowed anyway, given the existence of languages like Dutch in which complements precede the verb, but follow the noun.

So far, it has been established that UG contains two independent parameters, specifying the direction in which θ-roles and Case are assigned. Conflicts arising from different specifications for the two parameters in the same language were shown to be solved, either by moving an NP into a position in which it can be assigned Case, (cf also footnote 11) or by inserting a dummy preposition (cf Chinese ba).

2.3. Dutch

Let us now turn to yet another way in which a language may solve a similar conflict.

Complements in Dutch occur in different positions, according to whether they are complements of a verb or of a noun, (the two major categories). Dutch is VP final, but noun initial. D-structures, then, are determined as follows:

(21) a. Vs assign their θ-role to the left
b. Ns assign their θ-role to the right

Adjectives reflect the bifurcation shown in (21). Some adjectives are verbal-like, in the sense that they require their complements to occur in prehead position (for discussion see Van Riemsdijk, 1981). Others are noun-like and require their complements to occur in posthead position: een [mij bekend] gezicht, 'a face that is familiar to me', een kind [bang voor honden], 'a child afraid of dogs'. Dutch, furthermore, seems to have both pre- and postpositions.

Given these facts, what would the value for the directionality of Case assignment be? In order to determine this problem as far as Ps are concerned, we need to more precise, and make a distinction between lexical NPs that are complements of Ps, and pronominal complements of Ps (in particular the R-pronoun (cf Van Riemsdijk, 1978)). Since lexical NPs must be Case marked, we restrict our attention to lexical NPs. In surface structures, lexical NPs follow Ps, with the exception of certain motional Ps, which can both be followed and preceded by a lexical NP. However, it is important to note that such surface NP P strings do not appear to form a constituent (as opposed to P NP strings). This can be concluded from the fact that the

NP need not be adjacent to the P - other material of the VP can intervene - and that NP P fails to undergo constituent tests: it cannot be moved by wh-movement for example. We can thus discard Dutch postpositions as illustrating cases of bona fide Ps, and conclude that NP complements of Ps always follow the P. From this, the following value for the parameter of Case directionality for Ps can be deduced:

(22) Ps assign Case to the right

Two other Case-assigning categories, however, verbs and Case-assigning adjectives, are preceded by lexical NPs, suggesting (23):

(23) Verbs and certain adjectives assigns Case to the left

This would imply that besides the parameter for θ-role assignment, the parameter for directionality of Case assignment could also differ according to categorial specifications.

A closer look at the position of lexical NPs in VPs and APs with a Case assigning head indicates, however, that (23) is not as obvious as it seems. We will argue now that it should be rejected, and that (22) should instead be generalised to all categories.

The surface position of NPs seems to constitute a fairly reliable indicator for the parameter of Case directionality, particularly so if these NPs are also adjacent to their Case assigner. But lexical NPs occupy a somewhat unexpected position within the VP or AP. They occur, in the unmarked case, at the beginning of the VP or AP[10], so that they are non-adjacent to their Case assigner:

(24) a. NP.....[+V]]

b. dat Marie dat boek vaak aan Jan aangeraden heeft
that Mary that book often to John recommended has
'that Mary often recommended that book to John'

c. een [hem nog niet zo lang bekend] boek
a him not yet so long known book

The question arises of why NP complements occur in VP initial position, and not in a position immediately adjacent to their Case assigner.

Stowell (1981), addressing this problem, proposes a double headed structure for the VP in Dutch, with the head simultaneously occupying VP initial and VP final position. The initial position of the NP complements can then be explained as a consequence of the Adjacency condition on Case assignment: the direct object NP has to occur in VP initial position since it is assigned Case by the verb in VP initial position, under Adjacency. Stowell's motivation for a VP initial V-position, however, seems to stem from a misunderstanding of the rule of V-second: a verb may never occur in this position.

Stowell's proposal can quite easily be reformulated, however, with its attractiveness preserved, by assuming that it is not the verb that occurs in VP initial position, but, instead, its Case features. But why and how do these Case features end up in this position? Taking the latter problem first, one may think of this process as arising by movement of the Case fatures of the verbs, i.e. by move Case. Since clearly this movement rule cannot be a substitution rule, it can only be an adjunction rule, adjoining the Case features to the maximal projection VP, yielding the structure (25):

(25) $[_{VP}$ Case [.... V].

Although NP complements occur to the left of the verb, they can now be considered to occur to the right and adjacent to the Case features. This would imply then that Case is always assigned to the right, even in the VP and AP, explaining in this way the peculiar position of lexical NPs, and the non-adjacency in surface structure between Case assigner and Case assignee.

The reason why the Case features must move to VP initial position can be related to the parameter of Case directionality. If we assume (23), no explanation can be offered. But if instead we assume general rightward Case assignment for all lexical categories, movement of the Case features can be viewed as being forced by Case theory. In other words, the non-adjacency between an NP and its Case assigner would constitute an important indication that Case is not directly assigned by the lexical category, but rather indirectly, through an abstract Case position.

That (23) does not hold seems an interesting and also important conclusion. In fact, we may take this as evidence that there is strong internal pressure to set the parameter for Case directionality, uniformly, across categories. Let us therefore tentatively assume the following:[9]

(26) The Case directionality parameter holds uniformly in a particular language

In the case of conflict between general orientation and Case directionality, the language has to resort to escape mechanisms. In Dutch, this consists of the dissociation of the Case features from the Case assigner,[10] which can be thought of as move Case, in Chinese and Mahou, this was shown to be achieved, not by move Case, but by moving an NP into a position in which it can be assigned Case directly, under government and adjacency with a Case assigner.[11]

5. The head initial/head final parameter.

Let us finally briefly discuss the relation of the parameters of directionality of Case and θ-role assignment with respect to the head final-head initial parameter.

If UG contained a head final-head initial parameter, one would expect it to apply in full generality, regardless of the question whether a head is lexical or not. The head initial-head final parameter clearly accounts for the order of a lexical head and its complements; it overlaps with the parameter establishing directionality of θ-role assignment as far as the order of a head and θ-assigned complements are concerned.

It is not so clear that the head initial-head final parameter also succeeds in accounting for the order in a projection of a non-lexical head, like INFL for example. Although many attempts have been made to incorporate the S-system into X-bar theory, none of the accounts have proven very succesful. This, we think, may be due to the fact that at least three factors seem to come into play for the determination of the constituent order of S: subject predicate order, order of [NP, S] and INFL, and INFL VP order. It is argued in Koopman (1984) that the order of constituents of S is not determined by the X-bar schema, but rather by independent parameters. The scope of the head initial-head final parameter would thus basically be restricted to projections of lexical categories. If this is correct, it would be worth trying to eliminate this parameter from the grammar. This can be achieved by proposing for example that the parameter establishing directionality of θ-role assignment represents the core case of the head initial-head final parameter, setting the default value for the general orientation of a projection of a lexical category.

FOOTNOTES

1. See, among others, Koster (1978).

2. For discussion see Koster (1973), Reuland (1981).

3. Ps, for example, may not be stranded in postverbal position. This does not imply however that postverbal PPs are not governed by the verb. The impossibility of stranding may be independently explained by the fact that government alone is not a sufficient condition for P-stranding to occur; roughly speaking, Ps may only be stranded if they are assigned a θ-role by the verb. If θ-role assignment is a directional process, as we will argue below, it follows that only Ps in preverbal position may be stranded.

4. We assume VSO languages do have a VP node, and that surface VSO orders are derived by means of a verb movement rule that preposes a verb into the initial INFL node ((cf Koopman, 1984), or, alternatively, that they are derived by means of INFL movement, as proposed in Sproat (1983)).

5. See also Travis (1983).

6. Adjectives pattern with verbs. Since it is not clear whether adjectives should be considered to be a major projecting lexical category (cf Huang, p 93), we will discard them here.

7. Note also that if PPs were to be obligatorily extraposed, one would, given our discussion of Dutch, wrongly - expect the absence of PP idioms.

8. We do not concern ourselves with the complex internal structure of the VP in Dutch.

9. Note that we speak about general Case marking. We do not rule out the possibility that other more marked Case marking devices be available in certain constructions.

10. A similar process might be involved in nominative Case assignment in English (cf Koopman, 1984).

11. Alternatively, it could be argued that in Chinese or in Mahou it is not really the NP which moves into a position in which it can be assigned Case, but rather the Case assigner, i.e. the verb, which would move into a position from which it could assign Case. The difference between the two alternatives would reside in that if NP moves, a postverbal NP is never in a θ-position, and a preverbal trace must be assumed. However, if it is the verb that moves, the NP will always be in a θ-position at all levels of representation. We do not dispose yet of any evidence favoring one analysis rather than the other. It is clear, though, what kind of evidence one would need to

look at: if NP-movement is involved, one would expect to find an asymmetry between the types of NPs that may occur in pre- or postverbal position in Chinese for example. Also, one would expect the absence of certain types of V NP idioms (basically those in which the NP may not be passivized). Whatever the correct analysis, however, it does not affect our argument that UG contains a parameter establishing the direction in which Case is assigned.

REFERENCES

Bamba, M (1982), "La Structure de Base du Mahou", manuscript, UQAM

Bamba, M (1984), "La Phonologie du Mahou", MA thesis, UQAM.

Belletti, A., and L. Rizzi (1981), "The syntax of 'ne': some theoretical implications", in The Linguistic Review 1.2.

Chomsky, N. (1981), Lectures on Government and Binding: The Pisa Lectures, Foris Publications Dordrecht.

Huang, C.-T.J. (1982) Logical Relations in Chinese and the Theory of Grammar, MIT PhD dissertation.

Koopman, H. (1984) The Syntax of Verbs: from Verb-movement Rules in the Kru Languages to Universal Grammar, Foris Publications, Dordrecht.

Koster, J. (1973), "PP over V", in Spektator 2.

Riemsdijk, H.van (1978), A Case Study in Syntactic Markedness: The Binding Nature of Prepositional Phrases. Foris Publications, Dordrecht.

Riemsdijk, H.van (1980), "On theories of Case: the Case of German Adjectives", mimeographed University of Amsterdam and MIT.

Reuland, E. (1981), "On Extraposition of Complement Clauses", in NELS XI, Amherst.

Sproat, R. (1983), "VSO languages and Welsh Configurationality", in MIT Working Papers 5.

Stowell, T. (1981) *Origins of Phrase Structure*, to appear by MIT Press.

Travis, L. (1983), "Word Order and Pramaters", in *MIT Working Papers 5*.

Vergnaud, J.-R. (1982), *Dependences et niveaux de representation en syntaxe*, these de doctorat d'etat, Universite de Paris VII.